

REMARKS

The Office Action mailed March 3, 2008 has been carefully considered and the following response prepared. Claims 1-16 are pending in the application.

Rejection under 35 USC 103

At page 3 of the Office Action the Examiner maintained the rejection of claims 1-16 under 35 USC 103 as being unpatentable over the combined teachings of Schnabel et al. (U.S. Patent 6,693,063), Wurtz et al. (U.S. Published application 2002/0016263) and Sixl (U.S. Patent 6,479,432) for the reasons set out in the previous Office Action. In the present Office Action, the Examiner alleged that all of the cited references are in the herbicide art and therefore it would have been expected that their combination would yield a composition that successfully functions as an herbicide. The Examiner also remarked that the preamble of the instant claims recites that the composition is an "oil suspension," however, the claim does not require a component that makes it oily. The Examiner further stated that, in a claim to a composition, a statement to the utility of its components has no patentable significance.

Applicants again traverse this rejection.

Claim 1 is directed to an oil suspension concentrate, comprising a) one or more herbicidally active compounds from the group of the sulfonamides in suspended form, b) one or more safeners, c) one or more organic solvents, and d) one or more sulfosuccinates. Claims 2-16 depend directly or indirectly from claim 1.

The preamble of claim 1 recites the type of claimed formulation, which is an art recognized type of pesticide formulation. Oil suspension concentrates, also referred to as oil dispersions (short form OD) or oil-based suspension concentrates are stable suspensions of active ingredients in a water immiscible liquid, which may contain other dissolved ingredients, intended for dilution with water before use. See the definitions of oil dispersion and oil-based suspension concentrates in Exhibits A (CropLife International) and B (Manual on development and use of FAO and WHO specifications for pesticides), respectively. The water immiscible fluid is not

required to be an "oil." The water immiscible fluid in claim 1 is one or more organic solvents (component c).

Schnabel et al. discloses herbicidal compositions comprising one or more herbicides of the hydroxybenzonitrile type and one or more surfactants comprising as structural element at least twelve alkylene oxide units. Schnabel et al. mentions at column 10, lines 4-24 that the herbicidal compositions can be formulated in a number of ways, including suspension concentrates, but the patent exemplifies only a water-soluble concentrate (Formulation Example 1) and a microcapsule suspension (Formulation Example 2). The herbicidal compositions can also contain other agrochemically active compounds different from the hydroxybenzonitrile type herbicide, such as an ALS inhibitor or other type of herbicide. Sulfonylureas are disclosed as a preferred type of ALS inhibitor (columns 18-21). The herbicidal compositions can also contain safeners, solvents and wetting agents such as sulfosuccinic acid esters. It should be noted that the wetting agents are disclosed as a formulation auxiliary for the aqueous phase of dispersions (column 16, lines 15-19).

Schnabel et al. addresses the technical problem that the combination of active ingredients, here hydroxybenzonitriles and sulfonamides are "incompatible" because the hydroxybenzonitriles degrade the sulfonamides in the mixture. This problem is solved by encapsulating the hydroxybenzonitriles before mixing them with the sulfonamides. The solvents and wetting agents referred to by the Examiner are listed on generically, especially the sulfosuccinate, which is listed therein as a wetting agent. Sulfosuccinates are not taught for the stabilization of sulfonmides, as in the present invention. A person skilled in the art would not consider Schnabel et al. as a starting point or to be relevant for solving the problem of the present invention, even though this reference is in the herbicide art.

Sixl relates to liquid suspension concentrates used for control of harmful plant growth containing dispersed sulfonylurea herbicides. Sixl addresses the technical problem of compounds, which tend to degrade chemically in the dissolved state or in liquid media. This problem is solved by providing a liquid suspension concentrate. Sixl discloses suspension concentrates comprising one or more solid herbicidally active compounds from the group of the sulfonylureas in suspended form, one or more active compounds which are partially or

completely dissolved in an organic solvent or solvent mixture, one or more nonionic emulsifiers, and optionally one or more ionic emulsifiers, and one or more thickeners or thixotropic agents and no water or up to 30 percent by weight of water in dissolved form.

Wurtz et al. relates to liquid formulations, which are stable to degradation and which have favorable performance properties. Wurtz et al. discloses liquid formulations comprising one or more derivatives of polycarboxylic acids and one or more active compounds from the group of ALS inhibitors. The liquid formulations disclosed in Wurtz et al. are preferably emulsion concentrates (paragraph 0012). Preferred types of polycarboxylic acid derivatives mentioned in Wurtz et al. include the sulfosuccinates (paragraphs 0032-0037). The liquid formulations can also contain organic solvents and safeners.

The present invention relates to oil suspension concentrates that have high chemical and physical stability in manufacture, storage, handling and application. The formulations disclosed in the present invention also addresses the objective problem of the formation of crystals by the active compound in liquid suspension concentrates. Such crystals cause the undesired formation of plaques.

The formulation disclosed in the present invention suppresses the formation of crystals and subsequently the formation of plaques. This is evidenced in the Declaration of Dr. Roland Deckwer that accompanies the present response. In Example 5 of the Declaration it can be seen that the absence of Triton[®] GT-7M E (which contains a sulfosuccinate) from the formulation of Example 5.2 in Table 4 leads to an increase in particle size, an indication of the formation of plaques. By contrast, the formulation of Example 5.1, which falls within the scope of the claimed oil suspension concentrates, clearly has decreased particle size, indicating the regression of plaque formation. Additionally, Examples 6 and 7 show negative effects resulting from plaque formation (crystal size).

Additionally, as shown in Example 1 of the Declaration, the chemical stability of the sulfonamide (iodosulfuron) in the manufacture process is increased due to the addition of sulfosuccinate (Triton[®] GR-7M E). Variations with respect to different high loadings of active ingredient are possible without decrease in stability during manufacture (bead milling) and storage as shown in Example 2 of the Declaration. Moreover, variations with respect to different

components of the oil suspension concentrates are also possible without decrease in chemical and physical stability during storage as shown in Example 3/Example 4 of the Declaration.

Schnabel et al., Sixl and Wurtz et al. are silent on the need to reduce the formation of crystals consisting of the active compound, which ultimately would lead to the undesired formation of plaques. A person skilled in the art would not have been aware of this potential problem that could surface from the reading of any of the cited references, much less be led to the formation of the present invention in the expectation that the detrimental formation of crystals could be suppressed. Applicants therefore respectfully disagree with the Examiner's assertion that one can arrive at the formulation of the present invention from the combination of the teachings of Schnabel et al., Sixl and Wurtz et al. since the problem of crystal formation was not identified in any of the cited references.

Therefore, it is apparent that a person skilled in the art would not have been motivated to modify the suspension concentrate disclosed in Sixl to create the formulation of the present invention that suppresses the formation of crystals of the active compound because neither Sixl nor Wurtz et al. or Schnabel et al. provide any hints or suggest such modifications. Refraining from *ex post facto* analysis, it is be apparent that the claimed oil suspension concentrates are neither disclosed nor suggested by the combination of Schnabel et al., Sixl and Wurtz et al. The oil suspension concentrates of the present invention are not obvious, and could not be obtained simply from the reading of Schnabel et al., Sixl and Wurtz et al.

In summary, Applicants submit that a *prima facie* case of obviousness has not been established with regard to claims 1-16. There is no suggestion or motivation to modify or combine the teachings of the references as suggested by the Examiner. There is no teaching or suggestion in any of the references or the knowledge of persons skilled in the art to modify the suspension concentrate of Sixl with any type of formulation auxiliary or additive, much less one or more sulfosuccinates, in order to obtain an oil suspension concentrate wherein crystal formation is suppressed.

Claims 1-16 are not obvious in view of Schnabel et al., Wurtz et al. and Sixl. Withdrawal of this section 103 rejection is again respectfully requested.

In view of the above the present application is believed to be in a condition ready for allowance. Reconsideration of the application, and entry and consideration of the Declaration of Dr. Roland Deckwer and the information in Exhibits A and B is respectfully requested. An early Notice of Allowance is earnestly solicited.

The Director is hereby authorized to charge any deficiency in the fees filed, asserted to be filed or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our Deposit Account No. 03-2775, under Order No. 09879-00039-US. A duplicate copy of this paper is enclosed.

Dated: July 3, 2008

Respectfully submitted,

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EXHIBIT A

Exhibit A

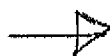


Representing the Plant Science Industry

Technical Monograph n°2 5th Edition

Catalogue of
pesticide
formulation types
and international
coding system

| CODE | TERM | DEFINITION |
|------|-----------------|---|
| MC | Mosquito coil | A coil which burns (smolders) without producing a flame and releases the active ingredient into the local atmosphere as a vapour or smoke. |
| ME | Micro-emulsion | A clear to opalescent, oil and water containing liquid, to be applied directly or after dilution in water, when it may form a diluted micro-emulsion or a conventional emulsion. |
| MG | Microgranule | A granule in the particle size range from 100 to 60 µm. |
| MV | Vaporizing mats | A mat, made from pulp or other suitable inert materials, and impregnated with an active ingredient. The mat is intended for use in a heating unit designed to produce slow volatilisation of the active ingredient. |



| | | |
|----|---|---|
| OD | Oil dispersion | A stable suspension of active ingredient(s) in a water-immiscible fluid, which may contain other dissolved active ingredient(s), intended for dilution with water before use. |
| OF | Oil miscible flowable concentrate (oil miscible suspension) | A stable suspension of active ingredient(s) in a fluid intended for dilution in an organic liquid before use. |
| OL | Oil miscible liquid | A liquid, homogeneous formulation to be applied as a homogeneous liquid after dilution in an organic liquid. |
| OP | Oil dispersible powder | A powder formulation to be applied as a suspension after dispersion in an organic liquid. |
| PA | Paste | Water-based, film-forming composition. |
| PB | Plate bait | Special form of bait. |
| PC | Gel or paste concentrate | A solid formulation to be applied as a gel or paste after dilution with water. |

The information contained in this monograph is based on the best
of the knowledge of CropLife International and the liability can be
assumed only in a very limited respect of the use of the information herein
resulting from any advice contained hereon.

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Application No. 10/734,828
Response to Office Action mailed March 3, 2008

Docket No.: 09879-00039-US

EXHIBIT B

Exhibit B

Manual on development and use of FAO and WHO specifications for pesticides

March 2006 revision of the
First edition

Available only on the internet

http://www.fao.org/ag/AGP/AGPP/Pesticid/Specs/Pdf/Manual_update%202006.pdf

PESTICIDE SPECIFICATIONS



In 2001, the Food and Agriculture Organization of the United Nations (FAO) and the World Health Organization (WHO) agreed to develop specifications for pesticides jointly, thus providing unique, robust and universally applicable standards for pesticide quality. This joint programme is based on a Memorandum of Understanding between the two Organizations.

The March 2006 revision of the 2nd edition of the *Manual on development and use of FAO and WHO specifications for pesticides*, which is available only on the internet, supersedes all previous manuals and guidance documents published by either FAO or WHO on this subject. It provides the standard process, unified requirements and procedures, harmonized definitions and nomenclature, technical guidelines and standards applicable to pesticides for use in agriculture and public health. FAO/WHO specifications for pesticides based on this manual are developed through the FAO/WHO Joint Meeting on Pesticide Specifications (JMPS) and published on the Web sites of the two Organizations:

<http://www.fao.org/ag/agp/agpp/pesticid/>

and

<http://www.who.int/whopes/quality/>

FAO/WHO specifications apply only to the products of manufacturers whose technical materials have been evaluated. The specifications may be used to provide an international point of reference against which the quality of products can be judged, either for regulatory purposes or in commercial dealings, thereby helping to prevent the trade, sale and use of inferior quality pesticide products. Thus the specifications will enhance confidence in the purchase and use of pesticides and, at the same time contribute towards better pest control, sound agricultural production, effective vector control measures and improved user, public and environmental safety throughout the world, especially in developing countries.

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Grey shading = new/revised or deleted text adopted by JMPIS in February 2006.

7.34 OIL-BASED SUSPENSION CONCENTRATES (OD) (Oil Dispersion)

Introduction

An oil-based suspension concentrate (OD) is a stable suspension of active ingredient(s) in an organic fluid, which may contain other dissolved active ingredient(s), intended for dilution with water before use.

OD formulations are metastable systems, like oil-in-water emulsions (EW) and suspension concentrates (SC). Therefore, after transportation and storage it may be necessary to re-homogenise the formulation, either by shaking or by stirring.

OD, like SC formulations, do not disperse as spontaneously as EC formulations upon dilution in water. Therefore the spray solution has to be stirred in order to obtain a homogeneous dispersion before application.

The parameters which best describe the performance characteristics are:

- pourability (to ensure that the OD can be poured from its container);
- dispersion stability, wet sieve and persistent foam tests (to ensure the sprayability and stability of the diluted suspension);
- storage at elevated temperature (to ensure the absence of crystal growth upon storage).

Information about other properties may also be given, e.g. mass per millilitre, acidity or alkalinity and stability at 0°C, but these parameters do not normally constitute essential parts of the specification.

Note for preparation of draft specifications. Do not omit clauses or insert additional clauses, nor insert limits that are more lax than those than given in the guidelines, without referring to section 4. From the "Notes" provided at the end of this guideline, incorporate only those which are applicable to the particular specification.

..... [ISO common name] OIL-BASED SUSPENSION CONCENTRATE

[CIPAC number]/OD (month & year of publication)

7.34.1 Description

The material shall consist of a stable suspension of fine particles of technical [ISO common name], complying with the requirements of FAO specification, in the form of (see Section 4.2), in a non-aqueous fluid together with suitable formulants. After shaking or stirring of the sample, the material shall be homogeneous (Note 1).

7.34.2 Active ingredient

7.34.2.1 Identity tests (Note 2)

The active ingredient shall comply with an identity test and, where the active remains in doubt, shall comply with at least one additional test.

Grey shading = new/revised or deleted text; numbers adopted by JIPIS in March 2006.